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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,905	12/27/2001	Seiichiro Higashi	038404.02	1688

25944 7590 04/25/2005

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EXAMINER	
MENGISTU, AMARE	
ART UNIT	**PAPER NUMBER**
2673	

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/026,905	HIGASHI, SEIICHIRO	
	Examiner	Art Unit	
	Amare Mengistu	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *telephone interview made on 4/1/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-31 and 33-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-31 and 33-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 22-24,27-29,36-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kanatani et** al (5,412,397) in view of **Shimada et al (5,576,730)** and **Herold (5,481,651).**

As to claims 22-24,27-29, 36-44 **Kanatani et al** discloses a display device, comprising: a plurality of scan lines (fig.1 (11)); a plurality of data lines (fig.1 (12)); a display matrix comprising a plurality of pixels (col.3, liens 26-39); a first data line driving circuit (fig.1 (3)); a second data driving circuit (fig.1 (4)); the first data line driving circuit (fig.1 (3)) connectable to at least one of the plurality of data lines through one end of the at least one of the data lines (fig. 1 (12)); the first data line driving circuit being a line sequential driver (see, fig.3, col.5, lines 9-36); the second data line driving circuit (fig.1 (4)) connectable to the at least one of the plurality of data lines through the other end of the at least one of the plurality of the data lines (fig.1 (12)) ; at least one of the plurality of data lines (fig.1 (12)) connectable to both of the first data line driving circuit (fig.1(3)) and the second data line driving circuit (fig.1 (4)).

Kanatani et al has failed to teach that *the second data line driving circuit having a plurality of switches, each switches being connected to of one of the plurality of the data lines and being turned ON sequentially, each of the plurality of switches being turned on in response*

to a single pulse. However, the patent **Shimada et al** clearly teaches it is well known for a second data line driving circuit (fig.1 (6)) having a plurality of switches (fig.1 (7)), each switches connected to one of the plurality of the data lines (fig.1 (2)) and being turned on sequentially (col.2, lines 9-21, col.8, lines 37-40, col.9, lines 15-18).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have incorporated the switch system to turn ON sequentially as taught by **Shimada et al** into the display device of **Kanatani et al** because this an advantage to the active matrix substrate and method for inspecting the same according to which signal charges can be measured with a high S/N ration with a little influence of nose, a fluctuation in the potential of an external signal line accompanied by the ON/OFF operation of switches can be reduced to a minimum extent.

Kanatani et al as modified by **Shimada et al** teaches a LCD display with the plurality of the data lines and being turned ON sequentially, but has failed to discloses that one of the data line driving circuit output an analog data signal. **Herold** is cited to teach that it is well known for LCD data driver to out put an analog data signals (fig.5 (502)) for the first and second data line driving circuits (see, fig.5 (504)).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to incorporate the D/A converter of **Herold** into the data driver of **Kanatani et al** since this will to convert the digital signal into analog signal therefore the analog signal have many operating speed, this will allow the display to have the capability of a continuous range of colors of shades rather than discrete value.

Claims 25, 26,30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kanatani** in view of **Shimada et al** and **Herold** further in view of **Usui** (4,816,816).

As to 25,26,30,33, **Kanatani** as modified by **Shimada et al** and **Herold** clearly teaches a plurality of scan lines (fig.1 (11)); a plurality of data lines (fig.1 (12)); a first data line driver (fig.1 (3)); a second data line driver (fig.1 (4)). A first scan line driver (fig.1 (2)). **Kanatani** has failed to teach at least one of the pluralities of scan lines connectable to a first and second scan line-driving circuit. However, the patent of **Usui** clearly discloses at least one of the plurality of scan lines connectable to a first and second scan line driving circuit (4 (33,35)); a plurality of scan line disposed between the first and the second scan line drivers (see, figs.1 and 2); the first and second data line drivers having a function of outputting a digital data signals (fig.2 (31 and 29 outputting a digital data DB, and DA), the first data line driving circuit being a line sequential driver (see, figs.5 and 7). It is inherent for **Usui's** display matrix to have a plurality of pixels at the intersection of scan lines and data lines.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to combine the teachings of **Usui's** having two scan line driving circuits in to the system of **Kanatani**, because this will allow the display system of **Kanatani** to scan the data using two scanning drivers so that the data can be scanned and displayed faster.

Response to Arguments

3. Applicant's arguments with respect to claims 22-, 31,33-44 have been considered but are moot in view of the new ground(s) of rejection.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amare Mengistu whose telephone number is (703) 305-4880. The examiner can normally be reached on M-F, T-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Amare Mengistu
Primary Examiner
Art Unit 2673

A.M

April 4, 2004